## SUPPORT FOR THE AMENDMENTS

The present amendment amends claim 1, and adds new claims 8-10. Support for the amendment to claim 1, and newly added claims 8-10, is found at specification page 3, lines 5-8, page 4, lines 8-16, page 5, lines 7-14, page 6, lines 5-9, page 7, lines 18-31, Table 2, page 8, lines 5-11, Table 3. It is believed that these amendments, and the submission of the attached replacement drawing sheet, have not resulted in the introduction of new matter.

## REMARKS

Claims 1-10 are currently pending in the present application. Claim 1 has been amended, and new claims 8-10 have been added, by the present amendment. Claims 4-7 stand withdrawn from consideration by the Examiner as being directed to a non-elected invention.

The rejection of claims 1-3 under 35 U.S.C. § 103(a) as being obvious over Back (U.S. Patent 4,943,463) in view of Kessler (U.S. Patent 4,288,905) and Harper (Handbook of Plastics) is respectfully traversed in part, and obviated by amendment in part, with respect to claims 1-3 and 8-10, which incorporates into amended claim 1 the limitation that the plastic tube and the plastic rod are discharged from the extruder and then introduced without contact with one another into a vacuum tank calibrator, wherein the plastic rod is heat conditioned in the vacuum tank calibrator so as to achieve dimensional stability, and wherein at about 20 cm after entry into the vacuum tank calibrator the plastic tube is filled in parallel with the plastic rod and fused together.

Amended claim 1 now recites a process for producing a rod composed of a transparent plastic via extrusion of a plastic molding composition, wherein the process comprises: dividing the plastic molding composition into a plastic molding composition 1 and a plastic molding composition 2; extruding the plastic molding composition 1 as a plastic tube; and extruding the plastic molding composition 2 as a plastic rod, wherein the plastic tube and the plastic rod are discharged from the extruder and then introduced without contact with one another into a vacuum tank calibrator, wherein the plastic rod is heat conditioned in the vacuum tank calibrator so as to achieve dimensional stability, and wherein at about 20 cm after entry into the vacuum tank calibrator the plastic tube is filled in parallel with the plastic rod and fused together.

Back describes at column 3, lines 32-42 that "[t]he second [inner] stream of molten plastic is driven from zone 5 through an internal conduit 54 in the centre of the extrusion die core 38 and passes at the face of the die into a central pipe 56 which runs axially down the centre of the cooling jacket inside the hollow plastic profile and terminates at 58 *near the end of the cooling jacket* where the profile material emerges. Thus, a second [inner] stream of thermoplastic material is forced under pressure down the length of the hollow profile, *but without being exposed to the same cooling effect of the jacket* 42 and is forced, under pressure, into the interior of the hollow profile at 58" (emphasis added). As shown in Fig. 3 of Back, the point where the inner and outer plastics are fused together to form a rod (at the end of cone 60) is beyond the end of the cooling jacket 42. In other words, the process of Back is characterized in that the rod after combination of the inner and outer molten plastic streams is not further cooled by the calibrator. In the process of Back, the rod leaves the calibrator with a temperature of more than 200°C. Without calibration of this hot melt, the tube would re-melt or at least soften and would therefore loose its precise round form.

Unlike the process of Back, the melted stream of the plastic molding composition 1 and the melted stream of the plastic molding composition 2 are combined approximately within the 1st quarter of the vacuum tank calibrator. After streams 1 and 2 have fused together, the rod passes a long way through the vacuum tank calibrator as the temperature is reduced slowly from about 260°C to about 35-40°C. Unlike the process of Back, the process of the present invention produces a high quality round rod with a very low range of diameter variation. In accordance with the process of the invention, the heat energy introduced with the plastic molding composition 2 of the plastic rod is discharged in a manner which ensures that the round form is maintained. Accordingly, cooling of the plastic molding composition 2 of the plastic rod by the vacuum tank calibrator is an exemplary aspect of the present invention.

Back describes that the profile must remain " ... *somewhat flexible* ...," and thus cooling must be avoided (See e.g., column 3, lines 40-43 and 62-66). Therefore, the process of Back is fundamentally different from the process of the present invention, wherein softening is to be avoided in order to obtain a high quality round rod with a very low range of diameter variation.

Applicants respectfully submit that a *prima facie* case of obviousness for arriving at the claimed distance of at about 20 cm after entry into the vacuum tank calibrator, the plastic tube is filled in parallel with the plastic rod and fused together, by routine optimization has not been established.

A particular parameter must first be recognized as a result-effective variable before the determination of the optimal ranges of said variable may be characterized as routine experimentation. See e.g., MPEP § 2144.05(II)(B); and *In re Antonie*, 195 USPQ 6, 8, 9 (CCPA 1977).

Back and Kessler, when considered alone or in combination, fail to disclose or reasonably suggest to a skilled artisan that the plastic tube and the plastic rod are discharged from the extruder and then introduced without contact with one another into a vacuum tank calibrator, that the plastic rod is heat conditioned in the vacuum tank calibrator so as to achieve dimensional stability, and that at about 20 cm after entry into the vacuum tank calibrator the plastic tube is filled in parallel with the plastic rod and fused together

Contrary to the Official Action, since Back and Kessler are completely silent as to discharging the plastic tube and the plastic rod from the extruder and introducing the same without contact with one another into a vacuum tank calibrator, and heat conditioning the plastic rod in the vacuum tank calibrator so as to achieve dimensional stability, wherein at about 20 cm after entry into the vacuum tank calibrator the plastic tube is filled in parallel with the plastic rod and fused together, as presently claimed, Back and Kessler necessarily

fail to recognize that the claimed distance of at about 20 cm after entry into the vacuum tank calibrator is a result-effective variable that may be optimized by routine experimentation.

Accordingly, a skilled artisan would neither have been motivated, nor had a reasonable expectation of success, to modify the processes described in Back and/or Kessler to arrive at the claimed distance of at about 20 cm after entry into the vacuum tank calibrator, the plastic tube is filled in parallel with the plastic rod and fused together, by routine optimization, based on the limited disclosures of Back and Kessler, absent impermissible hindsight reconstruction, thereby precluding a *prima facie* case of obviousness.

Assuming *arguendo* that sufficient motivation and guidance is considered to have been provided by Back and/or Kessler to direct a skilled artisan to arrive at the claimed process, which is clearly not the case, such a case of obviousness is rebutted by a showing of unexpected results.

As discussed in the present specification, Applicants have discovered that highly transparent rods having uniform diameters when measured at a number of different cross-sectional points along the rod are remarkably produced by the process of the present invention, as compared to the lower transparency non-uniform diameter properties exhibited by traditional rods produced by conventional processes (See e.g., page 2, lines 1-5, page 3, lines 5-33, page 4, lines 8-16, page 5, lines 7-14, page 6, lines 5-9, page 7, lines 18-31, Table 2, page 8, lines 5-11, Table 3).

It should also be mentioned that the inner stream of Back has to be injected under elevated pressure into the hollow plastic profile (See e.g., column 3, lines 57-61). The pressure is generated in Back by: (1) the flow control of the two melts (See e.g., column 3, lines 57-61, column 4, lines 11-16); and (2) the air stream pressure through the conduit 46 (See e.g., column 3, lines 16-24, column 4, lines 16-18). This is contrary to the process of the

present invention, wherein the melt streams 1 and 2 at the entrance of the dies have the same or nearly the same pressure.

A skilled artisan would immediately recognize that two extruders are necessary for carrying out the process of Back, and that the second extruder has to produce a melt stream with higher pressure that the first one. Back fails to disclose or suggest dividing one stream into two streams having the same or nearly the same pressure, or generating two streams with two extruders having the same or nearly the same pressure, since it is essential for the process of Back to inject the inner stream with elevated pressure. Unlike the process of Back, the process of the present invention involves two melt streams at the entrance of the dies having the same or nearly the same pressure.

According to Fig. 3 of Back, cone 60 causes a "ballooning" effect of the plastic profile which is deformed by the high pressure. Such "deforming" has to be avoided in the process of the invention as much as possible in order to maintain the high-quality round shape of the tube. Accordingly, a skilled artisan would immediately recognize that the process of Back is not compatible for producing the high quality round rods of the present invention.

As previously mentioned, a very high air pressure (e.g., 160 mbar) is applied in Back for injecting the inner melt. The hollow profile of Back is pressed against the cooling jacket (See e.g., column 3, lines 16-24). In contrast, the process of the invention involves applying a non-pressure generating support air or a much lower sub-atmospheric pressure (e.g., a view mbar) to ensure that the tube does not have contact with the inner pipe. As a consequence, the tube does not have contact with the vacuum calibrator after exiting the calibration die in the process of the invention.

Withdrawal of this ground of rejection is respectfully requested.

In conclusion, Applicants submit that the present application is now in condition for allowance and notification to this effect is earnestly solicited.

Respectfully submitted,

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